

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BECTON, DICKINSON AND COMPANY)	
GENEOHM SCIENCES CANADA, INC.)	
and HANDYLAB, INC.,)	
)	C.A. No. 19-1126 (LPS)
<i>Plaintiffs,</i>)	
)	
v.)	
)	
NEUMODX MOLECULAR, INC.,)	
)	
<i>Defendant.</i>)	

AMENDED JOINT CLAIM CONSTRUCTION CHART

The parties hereby submit the attached Amended Joint Claim Construction Chart identifying for the Court the terms/phrases of the asserted claims of U.S. Patent Nos. 8,273,308; 8,703,069; 7,998,708; 8,323,900; 8,415,103; 8,709,787; 10,494,663; 10,364,456; 10,443,088; 10,604,788; 10,625,261; 10,625,262; and 10,632,466, including each party's proposed construction of the disputed claim language with citations only to the intrinsic evidence in support of their respective proposed constructions.

A copy of the patents in issue as well as the portions of the intrinsic record relied upon in the attached Chart were previously submitted with the Joint Claim Construction Chart filed October 21, 2020 (D.I. 89).

Exhibits¹

Ex.	Description
1	U.S. Patent No. 7,998,708
2	U.S. Patent No. 8,273,308
3	U.S. Patent No. 8,323,900
4	U.S. Patent No. 8,415,103
5	U.S. Patent No. 8,703,069
6	U.S. Patent No. 8,709,787
7	U.S. Patent No. 10,364,456
8	U.S. Patent No. 10,443,088
9	U.S. Patent No. 10,494,663
10	U.S. Patent No. 10,604,788
11	U.S. Patent No. 10,625,261
12	U.S. Patent No. 10,625,262
13	U.S. Patent No. 10,632,466
14	File History of U.S. Patent No. 8,273,308 (Excerpts) <ul style="list-style-type: none"> • February 23, 2010 Office Action • May 24, 2010 Office Action Response • September 23, 2010 Office Action • April 25, 2011 Office Action • July 21, 2011 Office Action Response • February 10, 2012 Office Action Response
15	File History of U.S. Patent No. 8,709,787 (Excerpts) <ul style="list-style-type: none"> • February 28, 2013 Office Action • May 24, 2013 Office Action Response • July, 16, 2013 Office Action • Oct. 16, 2013 Office Action Response
16	U.S. Patent No. 7,323,140
17	U.S. Patent No. 6,575,188
18	U.S. Patent Application No. 60/307,638

¹ Exhibits are attached to the Joint Claim Construction Chart filed at D.I. 89.

19	File History of U.S. Patent No. 7,192,557 (Excerpts) <ul style="list-style-type: none"> November 3, 2005 Office Action Response
20	File History of U.S. Patent No. 7,998,708 (Excerpts) <ul style="list-style-type: none"> August 17, 2010 Office Action Response
21	File History of U.S. Patent No. 8,323,900 (Excerpts) <ul style="list-style-type: none"> January 31, 2012 Office Action Response May 10, 2012 Office Action Response
22	U.S. Patent Application No. 12/172,214
23	U.S. Patent Application No. 12/172,208
24	U.S. Patent Application No. 09/819,105
25	File History of U.S. Patent No. 10,625,262 (Excerpts) <ul style="list-style-type: none"> February 6, 2020 Office Action Response
26	File History of U.S. Patent No. 9,186,677 (Excerpts) <ul style="list-style-type: none"> June 29, 2011 Office Action Response
27	U.S. Patent Application No. 09/819,105
28	File History of U.S. Patent No. 10,364,456 (Excerpts) <ul style="list-style-type: none"> April 7, 2017 Office Action Response January 12, 2018 Office Action Response
29	U.S. Patent Application No. 60/567,174
30	U.S. Patent No. 8,852,862
31	File History of U.S. Patent No. 8,852,862 (Excerpts) <ul style="list-style-type: none"> August 24, 2020 Office Action
32	U.S. Patent No. 6,235,313
33	File History of U.S. Patent No. 10,604,788 (Excerpts) <ul style="list-style-type: none"> October 10, 2019, Office Action January 10, 2020 Office Action Response
34	File History of U.S. Patent No. 10,625,261 (Excerpts) <ul style="list-style-type: none"> February 6, 2020 Office Action Response

The parties dispute the constructions of the following terms:

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
1.	<p>“multi-lane microfluidic cartridge” / “multi-lane microfluidic cartridges”</p> <p>’708 (claims 1-33); ’900 (claims 1-22); ’466 (claims 23-30)</p>	<p>A microfluidic cartridge comprising a plurality of sample lanes with separate sample inlets and microfluidic networks.</p> <p>/</p> <p>Microfluidic cartridges comprising a</p>	<p>Ex. 1, ’708 patent⁴ at 4:7-14, 12:61-13:15, 13:21-29, 13:24-42, 13:55-61, 14:34-45, 14:48-52, 14:64-15:3, 17:55-50, 18:1-4, Figs. 9, 10A, 10B, 13.</p> <p>Ex. 13, ’466 patent at 32:45-61, 33:3-8, 34:58-35:3, 35:13-21, 35:53-61; 36:14-22, 36:41-49,</p>	<p>Plain and ordinary meaning</p>	<p>Ex. 1, ’708 patent at Fig. 9, Fig. 28, 13:2-15, 13:55-14:10, 14:64-15:24, 17:16-23, 17:65-67, 26:20-30, 45:63-46:2, claim 30</p> <p>Ex. 3, ’900 patent at Fig. 9, Fig. 28, 13:60-14:16</p>

² **Plaintiffs’ Note:** Defendant served its “reduced” list of terms for construction after 10:00pm on October 19, 2020, and that “reduced” list contained changes in proposed terms for construction and proposed constructions. Defendant further served an “amended” list of terms for construction after 10:00pm on November 29, 2020, and that “amended” list contained changes in proposed terms for construction and proposed constructions and additional intrinsic evidence. In light of the foregoing, Plaintiffs reserve their right to amend or supplement their proposed constructions and supporting intrinsic evidence.

³ **Defendant’s Note:** Defendant reduced its list of initial terms for construction at Plaintiffs’ request. The reduced list necessarily contained changes in the proposed terms for construction, and some constructions. NeuMoDx reserves its right to amend or supplement its proposed constructions and supporting intrinsic evidence. Both parties reserve the right to rely on evidence cited by the other parties.

⁴ **Parties’ Note:** The ’708 patent and ’900 patent share a common specification. The ’308 patent and ’069 patent share a common specification. The ’261 patent, the ’262 patent, and the ’466 patent share a common specification. The ’456 patent, the ’088 patent, the ’788 patent, and the ’663 patent share a common specification. The ’787 patent has a unique specification. The ’103 patent also has a unique specification. Citations to a patent specification that is shared in common with other patents are intended to also refer to the identical statements in the specifications of those other patents.

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
		plurality of sample lanes with separate sample inlets and microfluidic networks.	36:60-37, 37:7-14, 51:11-19, Figs. 1, 30, 34, 35, 37, 38A, 38B.		Ex. 13 , '466 patent at Fig. 38A, 38B, 36:41-37:6.
2.	microfluidic device '308 (claims 1 – 17, 19, 23-25) '069 (claims 1 – 10) microfluidic process module '308 (claims 18, 20-22)	Plain and ordinary meaning.	Ex. 2 , '308 patent at Fig. 2, 1:29-34, 4:2-5, 4:16-21, 4:12-21, 5:1-25, 5:56-64, claim 1, claim 15, claim 19, claims 2-16, claim 18. Ex. 5 , '069 patent at Fig. 2, claim 1.	A device made up of series of substantially enclosed zones or modules with a microscale dimension connected by channels to allow materials to be moved from one location to another location in the device.	Ex. 2 , '308 patent at Figs. 1-4, 1:25-38, 4:2-25, 5:12-25 Ex. 5 , '069 patent at Figs. 1-4, 1:29-34, 4:2-25, 5:12-25
3.	valve '308 (claims 1–25) '069 (claims 1–10) '787 (claims 10-22) a set of microfluidic valves '787 (claims 1-9)	Plain and ordinary meaning.	Ex. 2 , '308 patent at 6:25-36, 12:60-63, 14:27-29, claim 1, claim 9, claim 11, claim 12, claim 23, claim 15, claim 18, claim 19, claim 20, claims 21, claim 22, claim 23, claim 24, claim 25.	A component in communication with a channel with a normally open state allowing material to pass along a channel from a position on one side of the component to the other side.	Ex. 2 , '308 patent at 12:52-67, 10:55-62, 2:20-30; 2:20-24; Claims 1, 18, 19; Fig. 4; Figs. 8-9, Figs. 12A and 12B; Ex. 6 , '787 patent at Figs. 1, 2B, 3, 4C, 11, 12A-B; 12:34-35, 11:16-41, 12:45-64,

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
			<p>Ex. 5, '069 patent at claim 1, claim 5.</p> <p>Ex. 14, '308 file history, May 24, 2010, Office Action Response, BD_NMDX_00027555; September 23, 2010, Office Action Response at BD_NMDX_0002795-800.</p> <p>Ex. 17, '188 patent at 2:56-65, 7:23-33.</p> <p>Ex. 18, '638 application at 5:16-23.</p> <p>Ex. 6, '787 patent at 11:15-41, 12:37-45, 24:49-55, 29:39-40; 30:14-15, 30:40-31:66.</p>		<p>13:51-64, Claims 1, 7, 10, 11, 17</p> <p>Ex. 5, '069 patent at 12:52-68, 10:55-62, 2:18-28; Claim 1; Fig. 4; Figs. 8-9, Figs. 12A and 12B;</p>
4.	<p>computer controlled heat source in thermal contact with the DNA manipulation zone</p> <p>'308 (claims 1–25) '069 (claims 1–10)</p>	Plain and ordinary meaning.	<p>Ex. 2, '308 patent at 4:52-58, 8:21-24, claim 1, claim 18, claim 19.</p> <p>Ex. 14, '308 patent file history, February 10, 2012 Office Action Response at</p>	The heat source must be physically touching the DNA manipulation zone.	<p>Ex. 2, '308 patent at Figs. 2 & 4, 4:41-58</p> <p>Ex. 14, '308 File History, May 24, 2010 Office Action Response, BD_NMDX_000276</p>

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
			BD_NMDX_0004741-42. Ex. 5 , '069 patent at claim 6, claim 7.		0, amended Fig. 2 (BD_NMDX_0002768); Feb. 23, 2010 Office Action. Ex. 5 , '069 patent at Figs. 2 & 4, 4:41-61
5.	the heat source ... maintains a substantially uniform temperature throughout the PCR reaction zone during each cycle. '708 (claims 1-32) '900 (claims 1-22)	Plain and ordinary meaning.	Ex. 1 , '708 patent at Fig. 27, 14:59-61, 19:50-52, 19:59-64, 23:60-66, 31:55-58, 32:52-33:1, 33:11-31, 33:44-49; 34:34-53. Ex. 3 , '900 patent at claim 2, 33:24-33, Fig. 27. Ex. 20 , '708 patent file history, August 17, 2010 Office Action Response, at BD_NMDX_0000339. Ex. 21 , '900 patent file history at January 31, 2012, Office Action Response at BD_NMDX_0008099, BD_NMDX_0008107; May 10, 2012 Office	The heat source maintains the same temperature inside and at every point in the PCR reaction zone with a negligible temperature gradient.	Ex. 1 , '708 patent at Figs. 27A-C, Fig. 28, 33:11-49, 33:63-34:37 Ex. 3 , '900 patent at Figs. 27A-C, Fig. 28, 33:12-50, 33:64-34:38

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
			Action at BD_NMDX_0008200, -202.		
6.	<p>each lane comprises a PCR reaction zone configured to permit thermal cycling of a sample independently of the other samples</p> <p>'708 (claim 33) '900 (claim 20-22)</p> <p>the plurality of reaction chambers configured to permit thermal cycling of the plurality of samples independently of one another</p> <p>'787 (claim 9)</p> <p>Amplify one or more polynucleotides</p>	Plain and ordinary meaning.	<p>Ex. 1, '708 patent at 2:25-30, 8:39-49, 11:24-26, 12:6-13 13:49-54, 14:48-55, 17:7-15, 17:31-54, 39:10-12, 39:58-61, 40:13-18.</p> <p>Ex. 3, '900 patent at 11:29-31, 12:11-18, 13:54-59, 17:13-21, 17:37-59, 39:10-12, 39:58-61, 40:13-18.</p> <p>Ex. 6, '787 patent at 2:15-25, 4:55-62, 5:54-59, 9:13-16, 9:37-59, 32:35-36.</p> <p>Ex. 4, '103 patent at 2:39-51, 9:24-32, 18:63-66, 26:1-30, 26:46-52, 26:55-59, 27:8-18, 35:27-32</p>	Thermal cycling of one sample is not dependent on thermal cycling of another sample.	<p>Ex. 1, '708 patent at Figs. 1, 3, 8, 22, 27-33, 45-46; 4:7-15, 6:33-41, 7:64-67, 12:61-13:4, 13:55-57, 13:21-33, 14:18-33, 33:50-62, 34:38-60</p> <p>Ex. 3, '900 patent at Figs. 1, 3, 8, 22, 27-33, 45-46; 4:14-21, 6:39-46, 8:1-7, 12:66-13:9, 13:26-38, 13:60-62, 14:24-40, 32:66-33:2, 33:51-63, 34:39-61</p> <p>Ex. 4, '103 patent at Figs. 11, 17, 31A-B, 2:39-45, 4:41-45, 6:24-28</p> <p>Ex. 6, '787 patent at Fig. 20, 4:66-5:3, 9:37-59, 15:23-30, 23:37-52</p>

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
	<p>independently of the other lanes.</p> <p>‘787 (claim 12)</p> <p>carrying out amplification independently on a plurality of polynucleotide-containing samples,</p> <p>‘103 (claims 1–15)</p> <p>amplifying polynucleotides in the plurality of samples by independent application of successive temperature cycles to each sample.</p> <p>‘103 (claims 1-14)</p> <p>amplifying polynucleotides</p>				

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
	<p>contained within the plurality of samples, by application of successive temperature cycles independently to the reaction chambers.</p> <p>'103 (claim 15)</p> <p>reaction chambers are configured to permit thermal cycling of the plurality of samples independently of one another</p> <p>'103 (claim 3)</p> <p>reaction chambers configured to permit thermal cycling of the plurality of samples independently of one another;</p> <p>'103 (claim 15)</p>				

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
7.	<p>isolating the plurality of reaction chambers</p> <p>'787 (claim 9)</p> <p>isolating the samples in the plurality of reaction chambers</p> <p>'103 (claims 5, 6, 15)</p>	Plain and ordinary meaning.	<p>Ex. 6, '787 patent at 11:20-27, 12:37-45, 29:39-40, 30:14-15, claim 1, claim 10, claim 21.</p> <p>Ex. 4, '103 patent at Abstract, 11:20-23, 38:21-26, claim 1, claim 4, claim 5, claim 6, claim 15.</p>	Closing the valves that start in an open position to prevent ingress to or egress of fluids from the reaction chambers.	<p>Ex. 6, '787 patent at Figs. 2B, 11-12; 11:16-41, 12:37-64</p> <p>Ex. 4, '103 patent at Figs. 2E, 4B-C, 5A-B; 38:64-67, 2:47-48, 5:25-28, 10:45-48, 38:22-26, 40:50-55</p>
8.	<p>first module configured to extract nucleic acids from the plurality of nucleic acid containing samples</p> <p>'261 (claims 1 – 30)</p> <p>'262 (claims 1 – 24)</p> <p>extracting nucleic acids from the plurality of nucleic acid-containing samples in a first module</p>	Plain and ordinary meaning.	<p>Ex. 11, '261 patent at 7:15-24, 40:21-24, claim 1, claim 22, claim 27.</p> <p>Ex. 13, '466 patent at claim 1, claim 23.</p> <p>Ex. 12, '262 patent at claim 1, claim 3, claim 6, claim 7, claim 16.</p> <p>Ex. 24, '105 application, 11:40-52, 12:4-7.</p>	An assembly of components at the first location configured to extract nucleic acids from the plurality of nucleic acid containing samples, the components including a first bay receiving a first housing comprising a plurality of process chambers at the first location, a magnetic separator operating on the process chambers and a heating assembly	<p>Ex. 11, '261 patent at Figs. 1A-B, 3A-B, 4-12, 23, 26-27, 64, 66-69, 71; 2:23-44, 3:49-65, 7:15-24; 30:54-63; Claims 1, 7, 19-21, 22, 27, 30</p> <p>Ex. 12, '262 patent at Figs. 1A-B, 3A-B, 4-12, 23, 26-27, 64, 66-69, 71; 2:23-44, 3:49-65, 7:15-24, 30:58-67; Claims 1, 6, 13, 22-24</p>

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
	'466 (claims 1 – 30)			operating on the process chambers.	Ex. 13 , '466 patent at Figs. 1A-B, 3A-B, 4-12, 23, 26-27, 64, 66-69, 71; 2:24-43, 3:46-62, 7:7-16, 30:44-54; Claims 1, 4-10, 13, 23, 26, 28
9.	<p>second module configured to amplify the nucleic acid extracted from the plurality of nucleic acid containing samples</p> <p>'261 (claims 1 – 30)</p> <p>a second module configured to receive nucleic acids extracted from the plurality of nucleic acid-containing samples</p> <p>'262 (claims 1 - 24)</p>	Plain and ordinary meaning.	<p>Ex. 11, '261 patent at 7:15-24, 40:21-24, claim 1, claim 22.</p> <p>Ex. 13, '466 patent at claim 1, claim 18, claim 23, claim 30.</p> <p>Ex. 12, '262 patent at claim 1, claim 14.</p> <p>Ex. 34, '261 patent file history, February 6, 2020 Office Action Response at BD_NMDX_0041803-804.</p> <p>Ex. 25, '262 patent file history at February 6, 2020 Office Action</p>	An assembly of components at the second location configured to amplify the nucleic acid extracted from the plurality of nucleic acid containing samples, the components including a second bay receiving a second housing at the second location.	<p>Ex. 11, '261 patent at Figs. 3-4, 9, 23, 34-39, 49-51, 68-69, 71-72; 2:23-44, 3:49-65, 7:15-24; Claims 1, 7, 19-21, 22, 27, 30</p> <p>Ex. 12, '262 patent at Figs. 3-4, 9, 23, 34-39, 49-51, 68-69, 71-72; 2:23-44, 3:49-65, 7:15-24; Claims 1, 13, 22-24</p> <p>Ex. 13, '466 patent at Figs. 3-4, 9, 23, 34-39, 49-51, 68-69, 71-72; 2:24-43, 3:46-</p>

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
	<p>amplifying the nucleic acid extracted from the plurality of nucleic acid-containing samples simultaneously in a second module</p> <p>'466 (claims 1 – 22)</p> <p>second module configured to receive a multi-lane microfluidic cartridge configured to simultaneously amplify the nucleic acid extracted from the plurality of nucleic acid-containing sample</p> <p>'466 (claims 23-30)</p>		<p>Response at BD_NMDX_0042434-435).</p> <p>Ex. 26, '677 patent file history, June 29, 2011 Office Action Response at 4.</p> <p>Ex. 27, '105 application at 11:40-52, 12:4-7.</p>		<p>62, 7:7-16; Claims 1, 4-10, 13, 23, 26, 28</p>
10.	a bay configured to removably receive a housing comprising	Plain and ordinary meaning.	Ex. 11 , '261 patent at 12:40-63, 13:46-62, 14:17-30, 19:32-55,	A defined section of the system having a registration member to	Ex. 11 , '261 patent at Figs. 1B, 3B, 4, 6,

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
	a plurality of process chambers '261 (claims 1 – 30) '466 (claims 1 – 30)		33:18-30, 40:44-52, claim 1, claim 2, claim 4, claim 7, claim 8, claim 9, claim 14, claim 22, claim 24, claim 27. Ex. 13 , '466 patent at claim 1, claim 2, claim 3, claim 15, claim 16, claim 23, claim 24, claim 25.	receive a housing in a single orientation.	9, 21, 23, 26; 2:23-44, 13:46-62 Ex. 13 , '466 patent at Figs. 1B, 3B, 4, 6, 9, 21, 23, 26; 2:24-67, 13:38-54
11.	process chambers '261 (claims 1- 30) '262 (claims 1 –24) '466 (claims 1 –30)	Plain and ordinary meaning.	Ex. 11 , '261 patent at 18:4-11, 40:21-24,63:50-54, Fig. 64, claim 1, claim 2, claim 4, claim 7, claim 8, claim 14, claim 22, claim 24, claim 27. Ex. 13 , '466 patent at claim 1, claim 2, claim 3, claim 4, claim 5, claim 6, claim 7, claim 8, claim 9, claim 12, claim 13, claim 15, claim 16, claim 23, claim 24, claim 25, claim 26, claim 28.	Open tubes having an interior space for holding fluid.	Ex. 11 , '261 patent at Figs. 4-12C, 26, 27, 64; 2:24-67, 59:6-9, 14:39-45, 26:50-27:9, 63:35-56 Ex. 12 , '262 patent at Figs. 4-12C, 26, 27, 64; 2:24-67, 59:19-21, 14:39-45, 26:53-27:12, 63:42-62 Ex. 13 , '466 patent at Figs. 4-12C, 26, 27, 64; 2:24-67, 58:64-67, 14:39-45, 26:40-67, 63:28-50

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
			<p>Ex. 12, '262 patent at claim 1, claim 3, claim 6, claim 7, claim 16.</p> <p>Ex. 27, '105 application at [0046].</p>		
12.	<p>binding particles</p> <p>'456 (claims 1 – 20) '088 (claims 1 – 21)</p> <p>magnetic binding particles</p> <p>'663 (claims 1–49) '788 (claims 1–55)</p>	Plain and ordinary meaning.	<p>Ex. 7, '456 patent at 8:27-33, 8:60-65, 9:42-47, 10:19-23, 10:37-40, claim 1, claim 3, claim 4, claim 6, claim 9, claim 14, claim 18.</p> <p>Ex. 28, '456 patent file history, April 7, 2017 Office Action Response at BD_NMDX_0032307; -308; -313-314; January 12, 2018 Office Action Response at BD_NMDX_0031326-328, -333.</p> <p>Ex. 29, 60/567,174 application Appendix to the Specification at 2:11-16.</p>	Particles that retain polynucleotides of a sample under certain conditions and release polynucleotides under different conditions, having an average diameter of about 4 microns to 20 microns.	<p>Ex. 7, '456 patent at Figs. 1-2, 8:27-39, 10:19-23,</p> <p>Ex. 9, '663 patent at Figs. 1-2; 9:44-49, 29:10-21, example 1</p> <p>Ex. 8, '088 patent at Figs. 1-2; 2:7-30, 21:18-28, 10:20-24, 8:62-9:8</p> <p>Ex. 10, '788 patent at Figs. 1-2; 8:29-51, 10:21-25</p>

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
			<p>Ex. 30, '862 patent at claim 22.</p> <p>Ex. 31, '862 patent file history, August 24, 2020 Office Action Response at 6-7.</p> <p>Ex. 32, '313 patent at 5:54-57, 11:57-62.</p> <p>Ex. 8, '088 patent at claim 1, claim 3, claim 4, claim 5, claim 6, claim 8, claim 13, claim 15, claim 16, claim 17, claim 19.</p> <p>Ex. 9, '663 patent at 10:42-44, claim 1, claim 4, claim 5, claim 6, claim 8, claim 27, claim 30, claim 31, claim 32, claim 34.</p> <p>Ex. 10, '788 patent at claim 1, claim 2, claim 5, claim 22, claim 26, claim 28, claim 40, claim 45, claim 47.</p>		

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
13.	retaining polynucleotides from a sample on a plurality of binding particles in a process chamber '456 (claims 1 – 13) '088 (claims 1 – 21)	Plain and ordinary meaning.	Ex. 7 , '456 patent at 8:27-33, 16:21-29, 18:22-25, claim 1, claim 13, claim 14, claim 18. Ex. 28 , '456 patent file history, April 7, 2017 Office Action Response at BD_NMDX_0031313-314; January 12, 2018 Office Action Response at BD_NMDX_0031330. Ex. 8 , '088 patent at claim 1, claim 11, claim 12, claim 13.	A chamber for retaining binding particles where binding and release of polynucleotides occur.	Ex. 7 , '456 patent at Figs. 1, 2, 6A-B; 2:46-55, 8:27-9:6; 13:25-15:37 Ex. 8 , '088 patent at Figs. 1, 2, 6A-B; 2:48-57, 8:29-9:8, 13:27-15:37
14.	DNA manipulation module located downstream from the upstream channel '308 (claims 1-17) '069 (claims 1-10)	Plain and ordinary meaning.	Ex. 2 , '308 patent at Fig. 4, 5:56-64, 6:6-14, 12:51-63, claim 1. Ex. 16 , '140 patent at claim 43. Ex. 5 , '069 patent at 12:51-63, claim 1, claim 2.	A module in the microfluidic device that includes a zone for DNA amplification connected by an upstream channel to the remainder of the microfluidic device.	Ex. 2 , '308 patent at Figs. 2-4, 12:51-67 Ex. 5 , '069 patent at Figs. 2-4, 12:51-67

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
15.	a controller programmed to close the first and second valves to prevent gas and liquid from flowing into or out of the [DNA manipulation] zone [when amplification of the sample occurs] '308 (claims 1–25)	Plain and ordinary meaning.	Ex. 2 , '308 patent at abstract, 3:46-51, claim 1, claim 18, claim 19.	The controller is provided with coded instructions to close first and second valves that start in an open position to prevent gas and liquid from flowing into or out of the DNA manipulation zone when amplification of the sample occurs.	Ex. 2 , '308 patent at Fig. 1, Fig. 4, Figs. 8-9, Fig. 12A-B, 3:46-55, 10:55-62, 12:58-67, Ex. 14 , '308 File History, July 21, 2011 Office Action Response, pgs. BD_NMDX_000455 3-554; April 25, 2011 Office Action
16.	microdroplet '308 (claims 2-4, 8-10)	Plain and ordinary meaning.	Ex. 2 , '308 patent at 1:29-34, 8:56-60, 8:65-93, 9:40-48, claim 2, claim 8, Ex. 19 , 7,192,557 file history, November 3, 2005, Office Action Response at 10.	A discrete sample having a predetermined volume between about 1.0 picoliter and about 0.5 microliters.	Ex. 2 , '308 patent at Figs. 3-4, 8-11, 15; 8:56-64
17.	DNA manipulation zone '308 (claims 1-17, 19-25)	Plain and ordinary meaning.	Ex. 2 , '308 patent at Fig. 4, 12:51-63; 13:1-10, claim 1, claim 2, claim 4, claim 5, claim 6, claim 7, claim 8, claim	DNA manipulation zone is the reaction chamber configured to perform PCR amplification of nucleic acids present	Ex. 5 , '069 patent at Abstract, 12:52-58, Figs. 2-4

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
	'069 (claims 1-10)		9, claim 10, claim 14, claim 15, claim 19. Ex. 5 , '069 patent at claim 1, claim 3, claim 6, claim 7, claim 8, claim 9, claim 10.	within a lysed cell sample.	Ex. 2 , '308 patent at Abstract, 12:52-58, Figs. 2-4
18.	closing the first valve and the second valve such that gas and liquid are prevented from flowing into or out of the DNA manipulation zone '069 (claims 1-10)	Plain and ordinary meaning.	Ex. 2 , '308 patent at 14:23-25. Ex. 5 , '069 patent at 1, claim 5.	The first and second valves that start in an open position are closed to prevent gas and liquid from flowing into or out of the DNA manipulation zone when amplification of the sample occurs.	Ex. 5 , '069 patent at Figs. 2-4, Figs. 8-9, Fig. 12A-B, 3:46-55, 10:55-62, 12:58-63 Ex. 2 , '308 patent at Fig. 1, Fig. 4, Figs. 8-9, Fig. 12A-B, 3:46-55, 10:55-62, 12:58-63; Ex. 14 , '308 File History, July 21, 2011 Office Action Response, pgs. BD_NMDX_000455 3-554; April 25, 2011 Office Action

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
19.	lid at the receiving bay, the lid being operable to at least partially exclude ambient light from the receiving bay '708 (claim 19-24)	Plain and ordinary meaning.	Ex. 1 , '708 patent at 7:20-31, 10:15-26, 11:38-62, 35:46-53, 36:9-12, 41:48-50, 44:4-9, 43:44-47, claim 19, claim 20, claim 22, claim 23, claim 24.	The lid is a moveable cover (sliding, hinged or removable) for the top of the receiving bay.	Ex. 1 , '708 patent at Figs. 1, 6A-7, 37-40, 43A-B; 7:20-31, 10:15-26, 11:38-62
20.	microfluidic substrate layer '787 (claims 1 – 8)	Plain and ordinary meaning.	Ex. 6 , '787 patent at 8:37-45, 15:37-43, 7:32-41, 32:10-14, Fig. 29.	The material defining the microfluidic structure(s) of the microfluidic network(s).	Ex. 6 , '787 patent at Figs. 4A-4C, 15C; 7:54-8:10; Ex. 15 , '787 file history, Oct. 16, 2013 Office Action Response, pp. BD_NMDX_001717 3-174; July 16, 2013 Office Action
21.	inlet port in fluid communication with the reaction chamber '787 (claims 1 -8, 10– 22)	Plain and ordinary meaning.	Ex. 6 , '787 patent at 2:5-14, 2:28-42, 26:8-21, claim 1, claim 10,	There is an open pathway for fluid to flow between the inlet port and the reaction chamber.	Ex. 6 , '787 patent at Figs. 1-3, 10B, 11; 5:10-13, 2:5-10, Ex. 15 , '787 file history, May 24, 2013 Office Action Response, pg. BD_NMDX_001708

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
					4; Feb. 28, 2013 Office Action
22.	the first and second sets of microfluidic valves are all formed in the microfluidic substrate layer '787 (claims 1 –8, 10-22)	Plain and ordinary meaning.	Ex. 6 , '787 patent at 2:26-47, 12:48-51, claim 10, claim 11, claim 12, claim 13, claim 14, claim 15, claim 16, claim 17, claim 18, claim 19, claim 21, claim 22.	The first and second sets of valves are located entirely within the substrate layer.	Ex. 6 , '787 patent at Figs 4A-4C, 12B; 7:54-67
23.	extract nucleic acids from the plurality of nucleic acid containing samples '261 (claims 1 –30) '262 (claims 1 – 24) '466 (claims 1 – 30)	Plain and ordinary meaning.	Ex. 11 , '261 patent at 7:15-24, 18:7-8, 28:16-20, 42:41-57, 76, 82:17-19, 82:28-30, claim 1, claim 18, claim 19, claim 20, claim 22, claim 30. Ex. 13 , '466 patent at claim 1, claim 20, claim 21, claim 23; Ex. 12 , '262 patent at claim 24. Ex. 22 , '214 application at 4:39-55.	Lysing sample cells to release nucleic acid from the cells and binding the released nucleic acid to a binder to separate the nucleic acid from the surrounding material.	Ex. 11 , '261 patent at 11:45-47, 18:5-8, 28:16-20 Ex. 12 , '262 patent at 11:39-48, 16:16-26, 28:15-22 Ex. 13 , '466 patent at 6:65-9:19, 11:31-40, 17:66-18:3, 28:3-10

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
			Ex. 23, '208 application at [0005].		
24.	<p>transferring the lysate solution containing the plurality of magnetic binding particles into a first processing region, wherein the first processing region is within a microfluidic network in the system</p> <p>'663 (claims 1 –49)</p> <p>the first processing region is configured to receive the release solution therein, and wherein, in the presence of the release solution in the first processing region, the plurality of magnetic binding</p>	Plain and ordinary meaning.	<p>Ex. 9, '663 patent at abstract, 7:61-65, 15:53-59, 16:21-29, 16:43-55, 16:56-62, 18:11-25, claim 1, claim 17, claim 20, claim 23, claim 24, claim 25, claim 26, claim 27, claim 41, claim 43, claim 46, claim 47, claim 49.</p> <p>Ex. 7, '456 patent at 10:37-40.</p> <p>Ex. 32, '313 patent at 5:54-57, 11:57-62.</p> <p>Ex. 10, '788 patent at claim 1, claim 17, 20, 21, 22.</p> <p>Ex. 33, '788 file history, January 10, 2020 Office Action Response at BD_NMDX_0040738; -740; -748.</p>	<p>The first processing region is a region formed in the microfluidic network of the system that receives the lysate solution and the magnetic binding particles from the lysing container through a channel that connects the region with the lysing container.</p>	<p>Ex. 9, '663 patent at Figs. 1, 2, 4-6B; 4:51-67, 8:29-41, 16:43-62, 18:11-25, 19:62-20:61, 22:43-24:8, 28:49-58; claims 1, 20-24, 27, 43-47</p> <p>Ex. 10, '788 patent at Figs. 1, 2, 4-6B; 4:49-67, 8:29-41, 16:45-64, 18:12-26, 19:63-20:63; 22:45-24:10, 28:49-58; claims 1, 17-19, 22, 33-35, 40, 51-52</p>

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
	<p>particles are configured to release at least a portion of the polynucleotides into an eluate solution in the first processing region</p> <p>'788 (claims 1 – 39)</p> <p>a microfluidic network disposed in a plurality of substrate layers, wherein the microfluidic network comprises a processing region and a detection region</p> <p>'788 (claims 40-55)</p>				
25.	<p>the lysing container is located external to the microfluidic network</p> <p>'663 (claims 1–26)</p>	<p>Plain and ordinary meaning.</p>	<p>Ex. 9, '663 patent at Fig. 4, 3:25-29, 16:43-56, 31:7-16, claim 1, claim 6, claim 7, claim 16, claim 27, claim 29,</p>	<p>A lysing chamber located externally or outside of the microfluidic network, but is still fluidically</p>	<p>Ex. 9, '663 patent at Figs. 1-6B; 16:43-62, 18:10-24, 20:52-21:2, 21:59-22:58; claims 1, 20-24, 27, 43-47</p>

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
	<p>the lysing container is outside of the microfluidic network</p> <p>'663 (claims 27-49)</p> <p>a lysing container [is] located external to the substrate layers</p> <p>'788 (claims 1-55)</p>		<p>claim 32, claim 33, claim 40.</p> <p>Ex. 7, '456 patent at 20:53-61.</p>	<p>connected with the microfluidic network.</p>	<p>Ex. 10, '788 patent at Figs. 1-7; 16:45-64, 18:12-26, 20:54-21:4, 21:61-22:60; claims 1, 17-19, 22, 33-35, 40, 44, 51-52</p>
26.	<p>transferring the eluate solution containing polynucleotides to a second processing region in the system wherein the eluate solution reconstitutes PCR reagents contained in the second processing region to form a PCR-ready solution</p>	<p>Plain and ordinary meaning.</p>	<p>Ex. 9, '663 patent at 16:56-62, 18:26-37, 18:38-46, 24:26-34, claim 1, claim 13, claim 15.</p> <p>Ex. 10, '788 patent at claim 1, claim 7, claim 8, claim 22, claim 31, claim 40.</p> <p>Ex. 33, '788 patent file history at January 10, 2020 Office Action Response at</p>	<p>The second processing region is a portion of the microfluidic network that receives the eluate solution containing polynucleotides and places the eluate solution in contact with PCR reagents to form a PCR-ready solution.</p>	<p>Ex. 9, '663 patent at Figs. 1, 6A-B; 16:56-62, 18:26-37; 24:27-25:15; claims 1, 11-15, 27, 37-39</p> <p>Ex. 10, '788 patent at Figs. 1, 6A-B; 16:58-64; 18:27-55, 24:29-25:17; claims 1, 7-9, 22, 30-32, 40, 49-50</p>

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
	<p>‘663 (claims 1–49)</p> <p>a second processing region comprising PCR reagents, the second processing region configured to receive the eluate solution containing polynucleotides and configured to place the eluate solution in contact with PCR reagents to form a PCR-ready solution</p> <p>‘788 (claims 1-21)</p> <p>a second processing region comprising PCR reagents and configured to receive the eluate solution containing the eluted polynucleotides to reconstitute the PCR reagents and form a PCR-ready solution</p>		BD_NMDX_0040731-732.		

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
	'788 (claims 22-39)				
27.	microfluidic device comprising substrate layers that define a microfluidic network '788 (claims 1–55)	Plain and ordinary meaning.	Ex. 10 , '788 patent at 13:9-17, 16:51-59, claim 1, claim 10, claim 22, claim 24, claim 25, claim 40, claim 43. Ex. 33 , '788 patent file history, January 10, 2020 Office Action Response at BD_NMDX_0040745. Ex. 20 , 60/567,174 application at Appendix to the Specification, 28-29.	The microfluidic device is constructed from multiple substrate layers that are combined to form a microfluidic network, where at least two of the substrate layers are injection molded.	Ex. 10 , '788 patent at Figs. 1-6B; 7:61-65, 13:9-17, 16:45-64
28.	microfluidic network comprising a first processing region '788 (claims 1 – 21) microfluidic network that	Plain and ordinary meaning.	Ex. 10 , '788 patent at claim 1, claim 17, claim 20, claim 21, claim 22. Ex. 33 , '788 patent file history at January 10, 2020 Office Action Response at BD_NMDX_0040738; -740; -748-749.	The first processing region is a region formed in the microfluidic network of the system that receives the lysate solution and the magnetic binding particles from the lysing container through a channel that connects	Ex. 10 , '788 patent at Figs. 1, 2, 4-6B; 8:29-41, 16:45-64, 18:12-26, 19:63-20:61; 22:45-24:10; claims 1, 17-19, 22, 33-35, 40, 51-52 Ex. 9 , '663 patent at Figs. 1, 2, 4-6B; 16:43-63, 18:11-25,

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
	<p>comprises ... a first processing region</p> <p>'788 (claims 22-39)</p> <p>a microfluidic network disposed in a plurality of substrate layers, wherein the microfluidic network comprises a processing region and a detection region</p> <p>'788 (claims 40-55)</p> <p>the first processing region is within a microfluidic network in the system</p> <p>'663 (claims 1-49)</p>		<p>Ex. 9, '663 patent at Abstract, 7:61-65, 15:53-59, 16:21-29, 16:43-55, 16:56-62, 18:11-25, claim 1, claim 17, claim 20, claim 23, claim 24, claim 25, claim 26, claim 27, claim 41, claim 43, claim 46, claim 47, claim 49.</p> <p>Ex. 7, '456 patent at 10:37-40.</p> <p>Ex. 32, '313 patent at 11:57-62.</p>	the region with the lysing container.	19:62-20:63, 22:43-24:8, 28:49-58; claims 1, 20-24, 27, 43-47
29.	lysing container [is] located external to the substrate layers	Plain and ordinary meaning.	Ex. 10 , '788 patent at claim 1, claim 5, claim 6, claim 14, claim 22, claim 28, claim 29,	The lysing container is located on the external or outside surface of the substrate layers, but is	Ex. 10 , '788 patent at claims 1, 17-20, 22, 33-35, 40,44, 51-52; Figs. 1-7; 16:45-

No.	Claim Term	Plaintiffs' Proposed Construction	Plaintiffs' Intrinsic Evidence ²	Defendant's Proposed Construction	Defendant's Intrinsic Evidence ³
	'788 (claims 1 -55)		<p>claim 38, claim 39, claim 40, claim 42, claim 48, claim 53, claim 54.</p> <p>Ex. 32, '788 patent file history at October 10, 2019 Office Action at BD_NMDX_0040766-767; January 10, 2020 Office Action Response at BD_NMDX_0040731-732.</p>	<p>still fluidically connected with the microfluidic network.</p>	<p>64, 18:12-26, 20:54-21:4, 21:61-22:60</p>

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